

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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| Appl. No.: | 10/575,030   | § Confirmation No.: | 5940                     |
|            |  | §                   |                          |
|            |  | §                   |                          |
| Applicant: | Younes Jalali  | § TC/A.U.:          | 2123                     |
|            |  | §                   |                          |
|            |  | §                   |                          |
| Filed:     | 12/19/2006   | § Examiner:         | Mary C. Jacob            |
|            |  | §                   |                          |
|            |  | §                   |                          |
| Title:     | System And Method For<br>Determining Flow Rates<br>In A Well | § Docket No.:       | SHL.0423US<br>(103.0009) |
|            |  | §                   |                          |
|            |  | §                   |                          |

**Mail Stop AF**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Dear Sir:

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a Notice of Appeal.

It is respectfully submitted that the § 102 rejection of claim 1 is clearly erroneous, since Shah fails to disclose at least the following element of claim 1:

inverting, by a computer, the measured temperatures by applying the model to determine an allocation of production rates from different producing zones in the well, wherein **the inverting comprises using an optimization algorithm that solves an optimization problem for calculating the production rates, where the optimization problem minimizes an error between the measured temperatures and corresponding temperatures calculated by the model.**

As purportedly disclosing the foregoing subject matter of claim 1, the Office Action cited the following passages of Shah: Fig. 3 (elements 108, 110, 112); ¶ [0006], lines 5-8; ¶¶ [0037]-[0038]. 7/13/2010 Office Action at 4-5, 32.

The cited passage in ¶ [0006] states that flow rates are estimated by iteratively comparing measured static and transient well conditions with a model. However, there is no hint here regarding an optimization problem that **minimizes** an error between measured temperatures and corresponding temperatures calculated by a model.

Paragraphs [0037]-[0038] of Shah refer to Fig. 3, which includes steps 108, 110, and 112 cited by the Office Action. Step 108 compares actual transient data to calculated expectations of the model. Shah, ¶ [0037]. Shah notes that the modeling comparisons may be reiterated until an approximate match (within acceptable tolerances) is obtained between calculated well properties and measured well properties. *Id.*, ¶ [0038]. However, reiterating to accomplish an approximate match to within **acceptable** tolerances, is **not** the same as solving an optimization problem that **minimizes** an error between the measured temperatures and model-calculated temperatures.

The Office Action stated that Shah discloses that “if the ‘deviation’, or ‘error’ [of Shah] is too large (does not fall within an acceptable tolerance level), changes are made to the model and the process is reiterated until the calculated and measured temperature deviation is within an acceptable tolerance level.” 7/13/2010 Office Action at 32. Shah discloses that the process reiterates until the deviation between measured and model-calculated quantities are approximately “good enough,” *i.e.*, to within acceptable tolerances. This teaching is quite different from solving an optimization problem that **minimizes** an error between the measured temperatures and model-calculated temperatures.

In view of the foregoing, it is clear that Shah fails to disclose at least the last clause of claim 1, and thus, the anticipation rejection of claim 1 is clearly erroneous.

Independent claims 19 and 26 are allowable for similar reasons as claim 1.

Independent claim 12 is also allowable over Shah. Claim 12 recites measuring a total flow rate from the well, and where determining flow rates comprises inverting the measured temperatures by applying a model, where the inverting comprises allocating the total flow rate among the plurality of well zones.

The Office Action cited the following passages of Shah as purportedly disclosing the subject matter of claim 12: ¶¶ [0009], [0011], [0036]-[0038]. 7/13/2010 Office Action at 10-11, 33. Paragraph [0009] of Shah refers to estimating flow rates for plural well locations. Paragraph [0011] refers to measuring a wellhead flow rate. Paragraph [0011] also refers to modeling a well using the measurements to measure flow rates. However, there is no hint in these passages of Shah regarding inverting measured temperatures by applying a model that comprises **allocating** the **total flow rate among** the plurality of well zones.

Paragraph [0036] of Shah refers to measuring volumetric flow rates at the wellhead 22. However, there is no teaching or hint in Shah of using a total flow rate from the well to allocate

the total flow rate among the plurality of well zones in performing inverting to determine flow rates of a plurality of liquid phases through the plurality of well zones. Paragraphs [0037]-[0038] of Shah relate to reiterating the processing until the deviation between measured and model-calculated quantities are within acceptable tolerances. However, there is no hint in these passages that applying the model comprises allocating a total flow rate among a plurality of well zones.

Therefore, it is clear that claim 12 is allowable over Shah.

Dependent claims are allowable for at least the same reasons as corresponding base claims.

In view of the foregoing, it is respectfully requested that the final rejections of the claims be withdrawn. The Commissioner is authorized to charge any additional fees and/or credit any overpayment to Deposit Account No. 20-1504 (SHL.0423US).

Respectfully submitted,

Date: January 13, 2011 /Dan C. Hu/

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